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Complex formation of FeIII, CuII, and ZnII with L-3-(3-4-dihydroxyphenyl)alanine in aqueous solutions

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Abstract

© 2014 Springer Science+Business Media, Inc. The states of the iron(III), copper(II), and zinc(II) complexes with L-3-(3,4-dihydr- oxyphenyl)alanine in water were studied by spectrophotometry and nuclear magnetic relaxa- tion. The spectral and magnetic relaxation parameters of the L--(3,4-dihydroxyphenyl)alanine complexes with iron(III) ions were determined. The compositions and stability constants of the complexes were found by the mathematical simulation of the obtained data. The conclusions about the formation of a series of homo- and heterobinuclear complexes were made on the basis of an analysis of changes in the optical spectra and values of relaxation efficiency of solutions in systems iron(III)-L-3-(3,4-dihydroxyphenyl)alanine-MII (MII = CuII, ZnII).

Keywords

Absorption spectra, Complex formation, Copper(II), Iron(III), L-3-(3,4-dihydroxyphenyl)alanine, NMR relaxa-tion, Stability constants, Zinc(II)